

Amendments to the Specification:

On page 1, prior to the first paragraph which begins on line 2, please insert the following new title and paragraph:

FIELD OF THE INVENTION

The present invention relates to a relative pressure sensor with hydraulic pressure transmission.

BACKGROUND OF THE INVENTION

~~The present invention relates to a relative pressure sensor with hydraulic pressure transmission.~~

Such pressure sensors include, as a rule, a measuring unit with two chambers, each of which is sealed by a separating membrane, or diaphragm, and filled with a transmission medium. The separating membranes are loaded, respectively, with a pressure being measured and with a reference pressure. These pressures are transmitted via the separating membranes into the respective chambers. The chambers are separated from one another by a sensor element in the form of a pressure sensitive element, especially a measuring membrane, which is loaded on its first surface with the hydraulic pressure in the first half-cell and on its second surface with the hydraulic pressure in the second half-cell.

Please replace the paragraph which begins on page 1, line 33 and ends on page 2, line 14, with the following rewritten paragraph:

German Offenlegungsschrift (laid-open application) DE 37 13 236 A1 discloses, instead, the installing, between process and the measuring cell, of a sintered metal plate, or a steel plate with one bore, or a plurality of parallel bores, of, at most, 0.5 mm diameter. This solution is not satisfactory for various reasons. On the one hand, the reduction of the hydraulic path between process and measuring cell to even a single bore of 0.5 mm diameter and bore length such as is to be expected from the shown plate thickness, offers, by far, no sufficient damping for suppressing needle-shaped,

overloading, pressure spikes. On the other hand, if a damping element of a sufficiently great flow resistance for an effective damping is provided, then the reaction velocity of the sensor is significantly slowed, so that then pressure fluctuations within the measuring range of the sensor are registered only with delay.

On page 2, prior the paragraph which begins on line 15, please insert the following:

SUMMARY OF THE INVENTION

Please replace the paragraph which appears on page 2, line 17 and ends on line 20, with the following rewritten paragraph:

The object is solved by a relative pressure sensor comprising a measuring unit having: ~~as defined in claim 1. Further advantages and aspects of the invention are evident on the basis of the dependent claims, the specification and the drawings~~ a first chamber, which is sealed by a first separating membrane and filled with a transmission medium, said first separating membrane being loadable with the process pressure; a second chamber, which is sealed by a second separating membrane and filled with a transmission medium, said second separating membrane being loadable with the ambient pressure; a pressure-sensitive element, which separates said first chamber from said second chamber; and a damper for damping excess-pressure pulses, wherein said damper is arranged between said pressure-sensitive element and said second separating membrane.

On page 4, prior to the paragraph which begins on line 16, please insert the following:

BRIEF DESCRIPTION OF THE DRAWINGS

On page 4, prior to the paragraph which begins on line 28, please insert the following:

DETAILED DESCRIPTION

List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 9 (Cancelled).

10. (New) A relative pressure sensor for measuring a pressure difference between a process pressure and an ambient pressure, comprising a measuring unit, having:

a first chamber, which is sealed by a first separating membrane and filled with a transmission medium, said first separating membrane being loadable with the process pressure;

a second chamber, which is sealed by a second separating membrane and filled with a transmission medium, said second separating membrane being loadable with the ambient pressure;

a pressure-sensitive element, which separates said first chamber from said second chamber; and

a damper for damping excess-pressure pulses, wherein
said damper is arranged between said pressure-sensitive element and said second separating membrane.

11. (New) The relative pressure sensor as claimed in claim 10, wherein:
the transmission medium is a hydraulic liquid, especially a silicone oil.

12. (New) The relative pressure sensor as claimed in claim 10, wherein:
said pressure-sensitive element comprises a measuring membrane,
especially a piezoresistive silicon chip with a measuring membrane.

13. (New) The relative pressure sensor as claimed in claim 10, wherein: said damper comprises a sintered body.
14. (New) The relative pressure sensor as claimed in claim 13, wherein: the sintered body is a metallic or ceramic, sintered body.
15. (New) The relative pressure sensor as claimed in claim 10, wherein: said damper has a porous structure.
16. (New) The relative pressure sensor as claimed in claim 15, wherein: the porous structure has a flow-effective pore diameter of not less than 4 μm and not more than 28 μm , preferably between 8 μm and 16 μm .
17. (New) The relative pressure sensor as claimed in claim 16, wherein: the porous structure has a porosity between 15 vol.% and 50 vol.%, preferably between 25 vol.% and 35 vol.%.
18. (New) The relative pressure sensor as claimed in claim 13, wherein: the sintered body has an essentially cylindrical form and the length of the sintered body in the axial direction is at least twice as large as the diameter.